

## EAST Search History

| Ref # | Hits | Search Query  | DBs                | Default Operator | Plurals | Time Stamp          |
|-------|------|---|--------------------|------------------|---------|---------------------|
| L1    | 2201 | (dmfc or (alcohol near3 fuel cell))   | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>11:37 |
| L2    | 225  | 1 and anode and (pbi or polybenzimidazole)  | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>11:43 |
| L3    | 261  | 1 and (pbi or polybenzimidazole)  | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>11:43 |
| L4    | 6325 | (afc or (alcohol near3 fuel cell))  | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>12:21 |
| L5    | 656  | ((afc and fuel cell) or (alcohol near3 fuel cell))  | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>12:21 |
| L6    | 30   | 5 and (pbi or polybenzimidazole)  | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>12:22 |
| L7    | 205  | (anode or electrode) and fluoroplastic and membrane   | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>12:24 |
| L8    | 4    | 7 and (pbi or polybenzimidazole)  | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>12:24 |
| L9    | 133  | (dmfc or (alcohol near3 fuel cell)) and (anode or electrode) and (membrane) and (ptfe or poly tetrafluoroethylene) and (polybenzimidazole or pbi) | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>12:27 |
| L10   | 13   | two with layer with gas with diffusion with hydrophilic   | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>13:06 |
| L11   | 144  | (bilayer or trilayer or multi layer or multilayer or (two with layer)) with (gas adj3 diffusion) and hydrophilic                                  | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>13:14 |
| L12   | 23   | (bilayer or trilayer or multi layer or multilayer or (two with layer)) with (gas adj3 diffusion) same hydrophilic                                 | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>13:14 |
| L13   | 1176 | hydrophilic with backing  | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>13:18 |
| L14   | 89   | 13 and gas with electrode   | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>13:18 |
| L15   | 105  | hydrophilic with diffusion layer same cathode   | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>13:52 |
| L16   | 1    | "20020064709"   | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>15:06 |
| L17   | 532  | ovshinsky.in.   | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>15:06 |
| L18   | 31   | ovshinsky.in. and active material fuel cell   | US-PGPUB;<br>USPAT | ADJ              | ON      | 2008/06/23<br>15:07 |

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| L19 | 0    | ovshinsky.in. and (additive for precharging).ti.   | US-PGPUB;<br>USPAT        | ADJ | ON | 2008/06/23<br>15:08 |
| L20 | 10   | ovshinsky.in. and (additive).ti.   | US-PGPUB;<br>USPAT        | ADJ | ON | 2008/06/23<br>15:08 |
| L36 | 5699 | (nickel or ni) and (ruthinum or ru) and (aluminum or al) and (molybdenum or mo) and (platinum or pt) and catalyst                          | US-PGPUB;<br>USPAT        | ADJ | ON | 2008/06/23<br>16:00 |
| L37 | 2346 | (nickel or ni) and (ruthinum or ru) and (aluminum or al) and (molybdenum or mo) and (platinum or pt) and catalyst and alloy                | US-PGPUB;<br>USPAT        | ADJ | ON | 2008/06/23<br>16:00 |
| L38 | 1784 | (nickel or ni) same (ruthinum or ru) and (aluminum or al) and (molybdenum or mo) and (platinum or pt) and catalyst and alloy               | US-PGPUB;<br>USPAT        | ADJ | ON | 2008/06/23<br>16:01 |
| L39 | 597  | (nickel or ni) same (ruthinum or ru) same (aluminum or al) same (molybdenum or mo) same (platinum or pt) and catalyst and alloy            | US-PGPUB;<br>USPAT        | ADJ | ON | 2008/06/23<br>16:01 |
| L40 | 257  | (nickel or ni) same (ruthinum or ru) same (aluminum or al) same (molybdenum or mo) same (platinum or pt) same alloy and catalyst and alloy | US-PGPUB;<br>USPAT        | ADJ | ON | 2008/06/23<br>16:01 |
| L41 | 69   | (nickel or ni) same (ruthinum or ru) same (aluminum or al) same (molybdenum or mo) same (platinum or pt) same alloy same catalyst          | US-PGPUB;<br>USPAT        | ADJ | ON | 2008/06/23<br>16:01 |
| L42 | 1    | "6814777"  | US-PGPUB;<br>USPAT        | ADJ | ON | 2008/06/23<br>16:29 |
| L43 | 1    | "20010004501"  | US-PGPUB;<br>USPAT        | ADJ | ON | 2008/06/23<br>16:37 |
| S1  | 2774 | direct (methanol or alcohol) fuel cell   | US-PGPUB;<br>USPAT; USOCR | ADJ | ON | 2008/06/06<br>14:16 |
| S2  | 2960 | direct (methanol or alcohol) fuel cell or dmfc   | US-PGPUB;<br>USPAT; USOCR | ADJ | ON | 2008/06/06<br>14:17 |
| S3  | 499  | S2 and ((alkaline near4 electrolyte) or koh or potassium hydroxide)  | US-PGPUB;<br>USPAT; USOCR | ADJ | ON | 2008/06/06<br>14:20 |
| S4  | 451  | S3 and catalyst  | US-PGPUB;<br>USPAT; USOCR | ADJ | ON | 2008/06/06<br>14:21 |
| S5  | 318  | S4 and electrolyt\$4 same (liquid or chamber or housing or container)  | US-PGPUB;<br>USPAT; USOCR | ADJ | ON | 2008/06/06<br>14:22 |

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| S6  | 317 | S4 and electrolyt\$4 same (liquid or chamber or container)  | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/06 14:22 |
| S7  | 316 | S4 and electrolyt\$4 same (liquid or chamber)   | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/06 14:22 |
| S8  | 305 | S4 and electrolyt\$4 same (liquid)  | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/06 14:22 |
| S9  | 98  | S4 and electrolyt\$4 same (chamber)   | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/06 14:23 |
| S10 | 265 | S4 and electrolyt\$4 with (liquid)  | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/06 14:23 |
| S11 | 14  | ("20010036570"   "20020064709"   "20020094466"   "3673116"   "4554222"   "4569924"   "4615954"   "4828941"   "4975172"   "5599638"   "5656389"   "6183898"   "6814777"   "7056610").PN. | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/06 14:35 |
| S12 | 0   | (polybensimidazole or PBI) with OH with (doped or dope or doping)   | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/07 12:19 |
| S13 | 2   | (polybensimidazole or PBI) same OH same (doped or dope or doping)   | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/07 12:20 |
| S14 | 18  | (polybensimidazole or PBI) same ion same (doped or dope or doping)  | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/07 12:21 |
| S15 | 148 | (polybensimidazole or PBI) same (doped or dope or doping)   | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/07 12:44 |
| S16 | 128 | S15 not (S13 or S14)  | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/07 12:44 |
| S17 | 294 | (polybensimidazole or PBI) same (hydroxyl or hydroxy or oh)   | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/07 13:57 |
| S18 | 287 | S17 not S16   | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/07 13:59 |
| S19 | 6   | S18 and fuel cell   | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/07 13:59 |
| S20 | 45  | (polybensimidazole or PBI) same anion\$3  | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/07 14:01 |
| S21 | 123 | pbi same oh   | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/07 14:15 |
| S22 | 2   | pbi same oh same dope   | US-PGPUB; USPAT        | ADJ | ON | 2008/06/07 14:19 |
| S23 | 3   | (polybenzimidazole or PBI) same OH same (doped or dope or doping)   | US-PGPUB; USPAT; USOCR | ADJ | ON | 2008/06/07 14:19 |

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| S24 | 2    | "20020094466"  | US-PGPUB;<br>USPAT; USOCR  | ADJ | ON | 2008/06/07<br>14:35 |
| S25 | 1259 | (polybenzimidazole or PBI)<br>same (base or basic or non<br>acidic)  | US-PGPUB;<br>USPAT; USOCR  | ADJ | ON | 2008/06/07<br>14:43 |
| S26 | 59   | (polybenzimidazole or PBI)<br>same (base or basic or non<br>acidic) same (dope or doping<br>or doped)                              | US-PGPUB;<br>USPAT; USOCR  | ADJ | ON | 2008/06/07<br>14:44 |
| S27 | 31   | (polybenzimidazole or PBI)<br>same (base or non acidic)<br>same (dope or doping or<br>doped)                                       | US-PGPUB;<br>USPAT; USOCR  | ADJ | ON | 2008/06/07<br>14:46 |
| S28 | 21   | ((two or bi or multi) adj3<br>layer) same hydrophilic same<br>electrode and (dmfc or<br>((alcohol or air) adj3 fuel<br>cell))      | US-PGPUB;<br>USPAT; USOCR  | ADJ | ON | 2008/06/09<br>11:15 |
| S29 | 76   | hydrophilic with layer same<br>cathode and (dmfc or direct<br>methanol or alcohol adj3 fuel<br>cell)                               | US-PGPUB;<br>USPAT         | ADJ | ON | 2008/06/09<br>11:40 |
| S30 | 76   | hydrophilic with layer same<br>(cathode or positive) and<br>(dmfc or direct methanol or<br>alcohol adj3 fuel cell)                 | US-PGPUB;<br>USPAT         | ADJ | ON | 2008/06/09<br>11:50 |
| S31 | 121  | hydrophilic with layer same<br>(cathode or positive or<br>electrode) and (dmfc or direct<br>methanol or alcohol adj3 fuel<br>cell) | US-PGPUB;<br>USPAT         | ADJ | ON | 2008/06/09<br>11:50 |
| S32 | 45   | S31 not S29  | US-PGPUB;<br>USPAT         | ADJ | ON | 2008/06/09<br>11:50 |
| S33 | 2112 | hydrophilic and (cathode or<br>electrode) and layer  | FPRS; EPO;<br>JPO; DERWENT | ADJ | ON | 2008/06/09<br>11:55 |
| S34 | 19   | S33 and (dmfc or direct<br>methanol)   | FPRS; EPO;<br>JPO; DERWENT | ADJ | ON | 2008/06/09<br>11:55 |
| S35 | 5661 | hydrophilic same (cathode or<br>electrode)   | US-PGPUB;<br>USPAT         | ADJ | ON | 2008/06/09<br>12:00 |
| S36 | 3421 | (direct methanol) or dmfc or<br>(alcohol adj3 fuel cell)   | US-PGPUB;<br>USPAT         | ADJ | ON | 2008/06/09<br>12:01 |
| S37 | 287  | S35 and S36  | US-PGPUB;<br>USPAT         | ADJ | ON | 2008/06/09<br>12:01 |
| S38 | 261  | S37 and liquid   | US-PGPUB;<br>USPAT         | ADJ | ON | 2008/06/09<br>12:01 |
| S39 | 84   | S37 and liquid electrolyte   | US-PGPUB;<br>USPAT         | ADJ | ON | 2008/06/09<br>12:02 |
| S40 | 1    | "3979227".pn.  | US-PGPUB;<br>USPAT         | ADJ | ON | 2008/06/09<br>12:10 |

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| S41 | 2291 | S36 and anode same membrane  | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>12:14 |
| S42 | 260  | S36 and anode same membrane and (membrane same (pbi or polybenzimidazole))   | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>12:15 |
| S43 | 1    | "4569924".pn.  | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>13:02 |
| S44 | 1    | "6814777".pn.  | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>13:38 |
| S45 | 554  | (raney or reney) with (ni or nickel) same (ruthenium or ru) same (aluminum or al)  | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>13:41 |
| S46 | 224  | (raney or reney) with (ni or nickel) same (ruthenium or ru) same (aluminum or al) and (mo or molybdenum)                             | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>13:41 |
| S47 | 223  | (raney or reney) with (ni or nickel) same (ruthenium or ru) same (aluminum or al) and (mo or molybdenum) and catalysts               | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>13:41 |
| S48 | 12   | (raney or reney) with (ni or nickel) same (ruthenium or ru) same (aluminum or al) and (mo or molybdenum) and catalysts and fuel cell | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>13:41 |
| S49 | 2567 | (ni or nickel) same (ruthenium or ru) and catalysts and fuel cell  | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>14:20 |
| S50 | 982  | (ni or nickel) same (ruthenium or ru) same alloy and catalysts and fuel cell   | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>14:20 |
| S51 | 328  | S50 and (pt near2 ru)  | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>14:21 |
| S52 | 169  | S50 and (pt near2 ru) same (mo or molybdenum)  | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>14:21 |
| S53 | 0    | S52 and (raney or reney) with nickel same ((al or aluminum) and (mo or molybdenum))  | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>14:23 |
| S54 | 0    | S52 and (raney or reney) with (nickel or ni) same ((al or aluminum) and (mo or molybdenum))  | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>14:23 |
| S55 | 1    | S52 and (raney or reney) with (nickel or ni) same ((al or aluminum) or (mo or molybdenum))   | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>14:23 |
| S56 | 5051 | (ruthenium or ru) adj4 (nickel or ni) and catalyst   | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>14:59 |

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| S57 | 910   | S56 and (nickel or ni) same (aluminum or al) same (mo or molybdenum)  | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>15:00 |
| S58 | 29    | S57 and S36   | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>15:01 |
| S59 | 50    | raney (nickel or ni) with (ruthenium or ru) same alloy  | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>15:06 |
| S60 | 7277  | (nickel or ni) with (ruthenium or ru) same alloy  | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>15:07 |
| S61 | 3993  | (nickel or ni) with (ruthenium or ru) same alloy and (nickel or ni) with (aluminum or al)   | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>15:07 |
| S62 | 3253  | (nickel or ni) with (ruthenium or ru) same alloy and (nickel or ni) with (aluminum or al) and (molybdenum or mo)                      | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>15:08 |
| S63 | 3022  | (nickel or ni) with (ruthenium or ru) same alloy and (nickel or ni) with (aluminum or al) and (molybdenum or mo) and (platinum or pt) | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>15:08 |
| S64 | 222   | S63 and fuel cell   | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>15:08 |
| S65 | 54    | S63 and S36   | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>15:08 |
| S66 | 9     | tertiary alloy same catalyst  | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>15:13 |
| S67 | 30037 | (ni or nickel) with (ruthenium or ru)   | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>15:15 |
| S68 | 526   | S67 and S36   | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>15:15 |
| S69 | 9     | "5656389"   | US-PGPUB;<br>USPAT | ADJ | ON | 2008/06/09<br>15:40 |

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